

Docket No.: 066396-0057



PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 20277
Eric F. BRYAN, et al.	:	Confirmation Number: 2568
Application No.: 10/667,522	:	Group Art Unit: 2859
Filed: September 23, 2003	:	Examiner: Amy Cohen Johnson
For: INVISIBLE TARGET ILLUMINATORS FOR 3D CAMERA-BASED ALIGNMENT SYSTEMS	:	

REPLY BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Reply Brief is filed under 37 CFR 41.41 in response to the Examiner's Answer dated October 4, 2007. Rejected claims 1, 2, 4-9, 12, 13, 15-18, 20-31 remain on appeal. Appellant maintains the position that these claims stand improperly rejected. All arguments contained in the Principal Brief are reasserted herein. Reference is made herein to the Principal Brief for its descriptions of the applied references and arguments advanced for patentability. The following commentary focuses on points made by the examiner in the Examiner's Answer.

Reversal of the rejections of all claims on appeal is respectfully solicited.

Considering the Examiner's comments in relation to claim 1, it is Appellant's understanding that, within this context, the Examiner concedes that Jackson does not teach a position determination system having at least one light emitting diode comprising at least one invisible light emitting diode. However, the Examiner considers Jackson and Hendrix, combined to achieve what is claimed, to have been obvious at the time of the invention. The Examiner's position is not supportable.

Jackson and Hendrix involve two completely different optical systems. Jackson undertakes target reflection in which light from a source of visible light irradiates a target, and reflected light is detected to form an image of the target. Thus, per claim 1:

at least one invisible light emitting diode ... to emit strobed invisible light thereby illuminating the optically scannable target such that the light is retro-reflected to the image sensing device and the image sensing device detects and forms an image of the target;

Hendrix, by contrast, uses light emitting diodes *as the target*, whose position (not “orientation”) is determined. The diodes emit invisible light to be seen by a camera. The camera detects the relative positions of the diodes to compute positions relative to a reference plane.

The Examiner proposes that illuminating a target, per Jackson, to develop an image of the target through retroreflection by strobing a target with invisible light, and then imaging the reflection, would have been obvious simply because Hendrix uses a target composed of infrared light emitting diodes. A motivation for doing so, she expresses, is general desirability of “reducing visible clutter.”

However, Hendrix does not address “clutter” in any respect – there is no expressed need in Hendrix to reduce clutter, nor any reason at all for using infrared light (but with the caveat that visible light could equally be used). What would then motivate one of ordinary skill not to use invisible light to illuminate a target to be retroreflected to an image sensing device to detect and form an image of the target? Why would one of ordinary skill even presume that target image retroreflection using invisible light would be practical or even possible in the environment of vehicle alignment – a service bay? It is not at all clear that target imaging with invisible light could be found usable for vehicle alignment in the environment of a shop where alignment is normally performed. In fact, the inventors were pleasantly surprised to find, through prototyping, that it proved possible to implement target image retroflection for vehicle alignment using invisible light.

At page 14, second paragraph of the Examiner’s Answer, the Examiner says:

Jackson does not specifically disclose using at least one invisible light emitting diode. Hendrix discloses an alignment system wherein the light source used is at least one invisible

light emitting diode, and wherein visible or invisible light emitting diodes may be used. It is the teaching of using a light source of invisible light emitting diodes for the light emitting diodes of Jackson that is the rejection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include bidirectional means for indicating the direction in which the target object should be repositioned to the position determination system of Jackson, as taught by Hendrix, so that a user could more accurately manipulate the object in order to get the most accurate results.

Appellant cannot understand the examiner's point, as target repositioning is a nonsequitur in relation to using invisible light target imaging in Jackson.

In any event, to re-engineer Jackson with invisible light for target imaging, which the Examiner has done using the purported motivation of generally reducing "clutter," can be viewed as being obvious *only with benefit of hindsight* from Appellant's claim 1 and its supporting disclosure. This is saliently inappropriate. It is apparent that the rejection of claim 1 predicated on Jackson, together with Hendrix, is misplaced, and should be reversed.

Claim 30 reads:

The system of claim 1 further including a visible indicator that conclusively indicates whether the at least one invisible light emitting diode is operative.

The Examiner concludes that Liss, together with Jackson and Hendrix, renders this claim obvious. However, that is not the case. Liss indicates whether invisible light is received by a detector, by generating visible light that can be observed. However, non-receipt of invisible light does not conclusively indicate whether an invisible light emitting diode is operative. Non-receipt of invisible light can be caused by an obstruction in the invisible light path (which is not unusual in a shop environment). Hence, indication whether the diode is operative is not *conclusive*, as claim 30 requires. The rejection of claim 30 should be reversed.

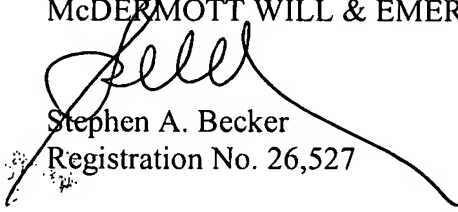
In view thereof, the rejections applied to the claims on appeal are based on error, and should be reversed. Such action is respectfully requested.

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To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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